

Amendments to the Claims:

This listing of claims will replace the prior version of claims in the application:

Listing of Claims:

Claim 1 (original): A process for the preparation of a carboxylic acid salt by dehydrogenation of a primary alcohol, the process comprising:

contacting an alkaline mixture comprising said primary alcohol with a dehydrogenation catalyst, said catalyst comprising a copper-containing active phase at the surface thereof and a supporting structure that is resistant to deformation under the conditions of the dehydrogenation reaction.

Claim 2 (original): A process as set forth in claim 1 wherein said supporting structure comprises a non-brittle material that has a yield strength of at least about 100 MPa.

Claim 3 (original): A process as set forth in claim 2 wherein said supporting structure comprises a metal sponge containing at least about 15% by weight non-copper metal and at least about 10% by weight copper.

Claim 4 (original): A process as set forth in claim 2 wherein the active phase at the surface of said catalyst comprises at least about 50% by weight copper.

Claim 5 (original): A process as set forth in claim 4 wherein said active phase contains less than about 1% by weight of a metal oxide other than cuprous oxide.

Claim 6 (original): A process as set forth in claim 4 wherein said active phase contains less than about 1% by weight of cuprous oxide.

Claim 7 (Previously amended): A process as set forth in claim 4 wherein said active phase contains at least about 1% by weight of a supplemental metal selected from the group consisting of chromium, titanium, niobium, tantalum, zirconium,

vanadium, molybdenum, manganese, tungsten, cobalt, nickel, bismuth, tin, antimony, lead, germanium, and mixtures thereof.

Claim 8 (original): A process as set forth in claim 2 wherein said supporting structure comprises a metal containing at least about 10% by weight non-copper metal.

Claim 9 (original): A process as set forth in claim 8 wherein said catalyst comprises a metal sponge.

Claim 10 (original): A process according to claim 8, wherein said non-copper metal comprises metal having a reduction potential which is less than about +343 mVolts vs. NHE.

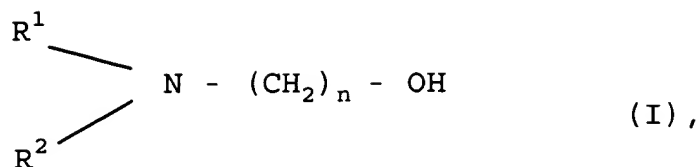
Claim 11 (previously amended): A process according to claim 8, wherein said metal support comprises at least about 10% by weight of a non-copper metal selected from the group consisting of nickel, zinc, tin, cobalt, iron and combinations thereof.

Claim 12 (original): A process as set forth in claim 8 wherein said catalyst comprises a surface stratum comprising said active phase, said surface stratum containing between about 0.005 and about 0.5 grams of copper per gram of said supporting structure.

Claim 13 (original): A process as set forth in claim 8 wherein said catalyst comprises a metal sponge support having deposited thereon a copper-containing outer stratum.

Claim 14 (original): A process as set forth in claim 8 wherein said catalyst comprises a particulate catalyst, the particles of which have the structure of claim 2.

Claim 15 (original): A process according to claim 8, wherein said primary alcohol comprises a compound corresponding to the formula:



wherein n is an integer ranging from 2 to 20; and R^1 and R^2 are independently hydrogen, hydrocarbyl, or substituted hydrocarbyl.

Claim 16 (original): A process according to claim 8, wherein said carboxylic acid salt comprises an alkali metal salt of (a) iminodiacetic acid, (b) glycine, or (c) an N-alkyl-glycine.

Claim 17 (original): A process according to claim 8, wherein said process further comprises phosphonomethylating said carboxylic acid salt to form N-(phosphonomethyl)iminodiacetic acid or a salt thereof.

Claim 18 (original): A process according to claim 17, wherein said process further comprises oxidizing said N-(phosphonomethyl)iminodiacetic acid to N-(phosphonomethyl)glycine or a salt thereof.

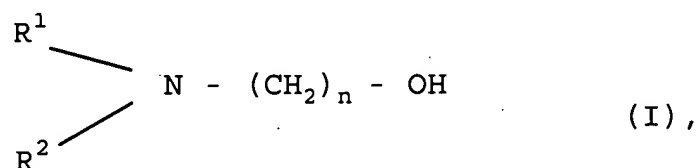
Claim 19 (original): A process as set forth in claim 2 wherein the catalyst comprises a metal sponge and said supporting structure comprises at least about 10% by weight non-copper metal and from about 2% to about 30% by weight copper.

Claim 20 (original): A process as set forth in claim 19 wherein said catalyst comprises a surface stratum comprising said active phase, said surface stratum containing between about 0.005 and about 0.5 grams of copper per gram of said supporting structure.

Claim 21 (original): A process as set forth in claim 19 wherein said catalyst comprises a metal sponge support having deposited thereon a copper-containing outer stratum.

Claim 22 (original): A process as set forth in claim 19 wherein said catalyst comprises a particulate catalyst, the particles of which have the structure of claim 2.

Claim 23 (original): A process according to claim 19, wherein said primary alcohol comprises a compound corresponding to the formula:



wherein n is an integer ranging from 2 to 20; and R¹ and R² are independently hydrogen, hydrocarbyl, or substituted hydrocarbyl.

Claim 24 (original): A process according to claim 23, wherein R¹ and R² are independently hydrogen; $-(\text{CH}_2)_x-(\text{CH}_3)_m$, x being an integer ranging from 0 to about 19, m being either 1 or 2; $-(\text{CH}_2)_y-\text{OH}$, y being an integer ranging from 1 to about 20; $(\text{CH}_2)_z-\text{COOH}$, z being an integer ranging from 1 to about 19; or phosphonomethyl.

Claim 25 (original): A process according to claim 24, wherein n is 2; R¹ is hydrogen; and R² is hydrogen, hydrocarbyl, or substituted hydrocarbyl.

Claim 26 (original): A process according to claim 25, wherein R² is hydrocarbyl.

Claim 27 (original): A process according to claim 26, wherein R² is $-(\text{CH}_2)_x-(\text{CH}_3)_m$.

Claim 28 (original): A process according to claim 27, wherein R² is $-\text{CH}_3$.

Claim 29 (original): A process according to claim 23, wherein said primary alcohol is selected from the group consisting of monoethanolamine, diethanolamine, and triethanolamine.

Claim 30 (original): A process according to claim 23, wherein said process further comprises phosphonomethylating said carboxylic acid salt to form N-(phosphonomethyl)iminodiacetic acid or a salt thereof.

Claim 31 (original): A process according to claim 30, wherein said process further comprises oxidizing said N-(phosphonomethyl)iminodiacetic acid to N-(phosphonomethyl)glycine or a salt thereof.

Claim 32 (currently amended): A process as set forth in claim 19, wherein the supporting structure of said metal sponge comprises at least about ~~[50%]~~65% by weight non-copper metal.

Claim 33 (original): A process according to claim 32, wherein said non-copper metal comprises metal having a reduction potential which is less than about +343 mVolts vs. NHE.

Claim 34 (currently amended): A process according to claim 33, wherein said supporting structure comprises at least about ~~[50%]~~65% by weight of a non-copper metal selected from the group consisting of nickel, zinc, tin, cobalt, iron and combinations thereof.

Claim 35 (currently amended): A process according to claim 34, wherein said supporting structure comprises at least about ~~[50%]~~65% nickel.

Claim 36 (currently amended): A process according to claim 34, wherein said supporting structure comprises at least about ~~[50%]~~65% cobalt.

Claim 37 (original): A process as set forth in claim 2 wherein said catalyst has a substantially homogeneous structure containing at least about 15% by weight non-copper metal and at least about 10% by weight copper.

Claim 38 (original): A process as set forth in claim 2 wherein said catalyst comprises a monophasic alloy containing at least about 15% by weight non-copper metal and at least about 10% by weight copper.

Claim 39 (original): A process as set forth in claim 2 wherein said catalyst has a heterogeneous structure comprising a support comprising a metal containing at least about 10% by weight non-copper metal and a surface active phase containing at least about 50% by weight copper.

Claim 40 (original): A process as set forth in claim 2 wherein said supporting structure comprises a metal sponge containing at least about 15% by weight non-copper metal and at least about 10% by weight copper.

Claim 41 (original): A process as set forth in claim 2 wherein said catalyst comprises a surface stratum comprising said active phase, said surface stratum containing between about 0.005 and about 0.5 grams of copper per gram of said supporting structure.

Claim 42 (original): A process as set forth in claim 2 wherein said catalyst comprises a metal sponge support having deposited thereon a copper-containing outer stratum.

Claim 43 (original): A process as set forth in claim 42 wherein said outer stratum is deposited by a method comprising electrochemical displacement reaction between a metal of said support and copper ions.

Claim 44 (original): A process as set forth in claim 42 wherein said outer stratum is deposited by a method comprising electroless plating of copper metal on said metal sponge support.

Claim 45 (original): A process as set forth in claim 2 wherein said catalyst comprises a particulate catalyst.

Claim 46 (original): A process according to claim 2, wherein said process further comprises phosphonomethylating said carboxylic acid salt to form N-(phosphonomethyl)iminodiacetic acid or a salt thereof.

Claim 47 (original): A process according to claim 46, wherein said process further comprises oxidizing said N-(phosphonomethyl)iminodiacetic acid to N-(phosphonomethyl)glycine or a salt thereof.

Claim 48 (original): A process according to claim 2, wherein said process further comprises collecting the hydrogen produced by the dehydrogenation reaction and transferring said hydrogen to a fuel cell for the production of electric power.

Claim 49 (original): A process for the preparation of a carboxylic acid salt by dehydrogenation of a primary alcohol, the process comprising:

contacting an alkaline mixture comprising said primary alcohol with a dehydrogenation catalyst, said catalyst comprising a metal sponge comprising a copper-containing active phase at the surface thereof and a supporting structure that contains at least about 10% by weight non-copper metal.

Claim 50 (original): A process as set forth in claim 49 wherein the copper content of said surface active phase exceeds the copper content of said supporting structure.

Claim 51 (original): A process as set forth in claim 50 wherein said surface active phase contains at least about 50% by weight copper and said supporting structure contains at least about 15% by weight non-copper metal.

Claim 52 (original): A process as set forth in claim 50 wherein said supporting structure contains between about 2% and about 30% by weight copper.

Claim 53 (original): A process according to claim 52, wherein said non-copper metal comprises metal having a reduction potential which is less than about +343 mVolts vs. NHE.

Claim 54 (previously amended): A process according to claim 52, wherein said metal support comprises at least about 10% by weight of a non-copper metal selected from the group consisting of nickel, zinc, tin, cobalt, iron and combinations thereof.

Claim 55 (original): A process as set forth in claim 52 wherein said catalyst comprises a surface stratum comprising said active phase, said surface stratum containing between about 0.005 and about 0.5 grams of copper per gram of said supporting structure.

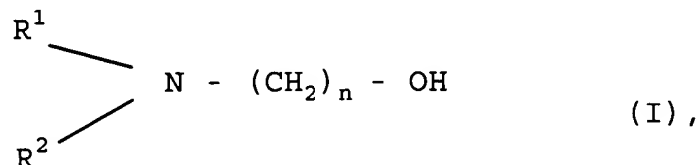
Claim 56 (original): A process as set forth in claim 52 wherein said catalyst comprises a metal sponge support having deposited thereon a copper-containing outer stratum.

Claim 57 (original): A process as set forth in claim 56 wherein said outer stratum is deposited by a method comprising electrochemical displacement reaction between a metal of said support and copper ions.

Claim 58 (original): A process as set forth in claim 56 wherein said outer stratum is deposited by a method comprising electroless plating of copper metal on said metal sponge support.

Claim 59 (original): A process as set forth in claim 52 wherein said catalyst comprises a particulate catalyst.

Claim 60 (original): A process according to claim 52, wherein said primary alcohol comprises a compound corresponding to the formula:



wherein n is an integer ranging from 2 to 20; and R¹ and R² are independently hydrogen, hydrocarbyl, or substituted hydrocarbyl.

Claim 61 (original): A process according to claim 60, wherein R¹ and R² are independently hydrogen; $-(\text{CH}_2)_x-(\text{CH}_3)_m$, x being an integer ranging from 0 to about 19, m being either 1 or 2; $-(\text{CH}_2)_y-\text{OH}$, y being an integer ranging from 1 to about 20; $(\text{CH}_2)_z-\text{COOH}$, z being an integer ranging from 1 to about 19; or phosphonomethyl.

Claim 62 (original): A process according to claim 61, wherein n is 2; R¹ is hydrogen; and R² is hydrogen, hydrocarbyl, or substituted hydrocarbyl.

Claim 63 (original): A process according to claim 62, wherein R² is hydrocarbyl.

Claim 64 (original): A process according to claim 63, wherein R² is $-(\text{CH}_2)_x-(\text{CH}_3)_m$.

Claim 65 (original): A process according to claim 64, wherein R² is $-\text{CH}_3$.

Claim 66 (original): A process according to claim 65, wherein said primary alcohol is selected from the group consisting of monoethanolamine, diethanolamine, and triethanolamine.

Claim 67 (original): A process as set forth in claim 50 wherein said catalyst has a substantially homogeneous structure containing at least about 10% by weight non-copper metal and at least about 15% by weight copper.

Claim 68 (original): A process as set forth in claim 50 wherein said catalyst comprises a monophasic alloy containing at least about 10% by weight non-copper metal and at least about 15% by weight copper.

Claim 69 (original): A process as set forth in claim 50 wherein said catalyst comprises a surface stratum comprising said active phase, said surface stratum containing between about 0.005 and about 0.5 grams of copper per gram of said supporting structure.

Claim 70 (original): A process as set forth in claim 50 wherein said catalyst comprises a metal sponge support having deposited thereon a copper-containing outer stratum.

Claim 71 (original): A process as set forth in claim 70 wherein said outer stratum is deposited by a method comprising electrochemical displacement reaction between a metal of said support and copper ions.

Claim 72 (original): A process as set forth in claim 70 wherein said outer stratum is deposited by a method comprising electroless plating of copper metal on said metal sponge support.

Claim 73 (original): A process as set forth in claim 50 wherein said catalyst comprises a particulate catalyst.

Claim 74 (original): A process according to claim 50, wherein said process further comprises phosphonomethylating said carboxylic acid salt to form N-(phosphonomethyl)iminodiacetic acid or a salt thereof.

Claim 75 (original): A process according to claim 74, wherein said process further comprises oxidizing said N-(phosphonomethyl)iminodiacetic acid to N-(phosphonomethyl)glycine or a salt thereof.

Claim 76 (original): A process according to claim 50, wherein said process further comprises collecting the hydrogen produced by the dehydrogenation reaction and transferring said hydrogen to a fuel cell for the production of electric power.

Claims 77-92 (withdrawn)

Claim 93 (original): A process for making a salt of a carboxylic acid, the process comprising contacting a catalyst with an alkaline mixture comprising a primary alcohol, wherein:

said catalyst is characterized as being formed by a process comprising depositing a copper-containing active phase on the surface of a metal sponge support, said metal sponge support comprising at least about 60% by weight of a non-copper metal and about 2% to about 30% by weight copper.

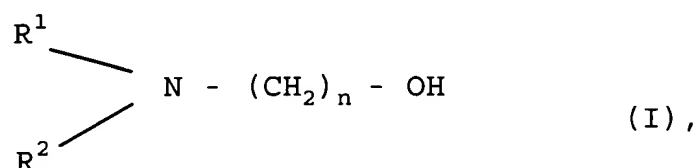
Claim 94 (original): A process according to claim 93, wherein said catalyst comprises a surface stratum comprising said copper-containing active phase, said surface stratum containing between about 0.005 to about 0.5 grams of copper per gram of said metal sponge support.

Claim 95 (original): A process as set forth in claim 93 wherein said catalyst has a copper-containing outer stratum deposited thereon.

Claim 96 (original): A process according to claim 95, wherein said non-copper metal comprises metal having a reduction potential which is less than about +343 mVolts vs. NHE.

Claim 97 (original): A process according to claim 95, wherein said copper-containing outer stratum is deposited by a method comprising electrochemical displacement reaction between a metal of said support and copper ions.

Claim 98 (original): A process according to claim 93, wherein said primary alcohol comprises a compound corresponding to the formula:



wherein n is an integer ranging from 2 to 20; and R¹ and R² are independently hydrogen, hydrocarbyl, or substituted hydrocarbyl.

Claim 99 (original): A process according to claim 93, wherein said carboxylic acid salt comprises an alkali metal salt of (a) iminodiacetic acid, (b) glycine, or (c) an N-alkyl-glycine.

Claim 100 (original): A process according to claim 93, wherein said process further comprises phosphonomethylating said carboxylic acid salt to form N-(phosphonomethyl)iminodiacetic acid or a salt thereof.

Claim 101 (original): A process according to claim 100, wherein said process further comprises oxidizing said N-(phosphonomethyl)iminodiacetic acid to N-(phosphonomethyl)glycine or a salt thereof.

Claims 102-168 (canceled).